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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/512,394	02/24/2000	Kyou-Yoon Sheem	3364.P039	5787

7590 06/05/2002

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EXAMINER

MERCADO, JULIAN A

ART UNIT	PAPER NUMBER
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1745

8

DATE MAILED: 06/05/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Applicant(s)

09/512,394

Examiner

Julian A. Mercado

Applicant(s)

SHEEM ET AL

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 March 2002.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) 11-16 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 March 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

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DETAILED ACTION

Remarks

This Office Action is responsive to Applicant's amendment filed March 26, 2002.

The proposed drawing correction and/or the proposed substitute sheets of drawings, filed on March 26, 2002, have been approved by the examiner. A proper drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The correction to the drawings will not be held in abeyance.

The rejection of claims 1, 3, 5, 6, 8 and 10 under 35 U.S.C. 102(e), and claims 2, 4, 7, and 9 under 35 U.S.C. 103(a), based on Wilson et al. have been withdrawn in favor of the new ground of rejection(s) set forth below. Additionally, the rejection of claims 1-10 under 35 U.S.C. 103(a) based on Wilson et al. and McFadden has been withdrawn.

This Office Action is made NON-FINAL in view of the new ground of rejection(s).

Claim Rejections - 35 USC § 103

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 1-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ueda et al. (U.S. Pat. 6,027,833) in view of either Yamada et al. (U.S. Pat. 5,595,838) or Peled et al. (U.S. Pat. 6,337,159, equivalent to WO96/27908 published September 12, 1996)

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Ueda teaches a negative active material comprising a crystalline carbonaceous core [311] and an amorphous carbon shell [312]. (col. 8 line 5 et seq.) The material has a planar distance of 3.36 angstroms at d_{002} . (col. 8 line 23, applies to claim 5 and 10)

While Ueda does not explicitly teach the active material to have a shoulder at 700 °C or more in differential thermal analysis, it is reasonably presumed that the active material would naturally flow to have the same measurable property absent of a structural distinction between the patentee's active material and that which is claimed by Applicant, especially in view of the lattice spacing in Ueda being identical to that presently claimed.

Ueda does not explicitly teach a transition metal included in the amorphous carbon shell. However, Yamada teaches a transition metal such as Ni as part of the shell for a carbon core. Thus, the skilled artisan would have found obvious to employ a transition metal in Ueda's invention in order to create a turbulent layer structure and thereby increase the shell's surface area.

Ueda does not explicitly teach a semi-metal, alkali metal or alkali earth metal included in the amorphous carbon shell. However, Peled teaches a semi-metal such as B, an alkali metal or an alkali earth metal such as Ca as part of the shell for a carbon core. (col. 4 line 1 – 22) Thus, the skilled artisan would have found obvious to employ an alkali or alkali earth metal in Ueda's invention for reasons such as elimination of graphite exfoliation.

As to the amount of metal, it is noted that Peled teaches up to 10% by atomic weight. (col. 2 line 22) While Yamada does not explicitly teach the amount of metal in terms of weight percentage, Yamada does disclose a specified thickness. Thus, absent of unexpected results, it is asserted that the weight percentage of metal is an optimizable parameter for a result-effective

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variable. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980) The amount of metal is deemed result-effective as it directly affects the X-ray diffraction and interlayer spacing of the resulting material.

Response to Arguments

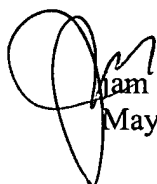
Applicant's arguments with respect to the Wilson and MacFadden references have been considered but are moot in view of the new ground(s) of rejection.


Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Julian A. Mercado whose telephone number is (703) 305-0511. The examiner can normally be reached on Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick J. Ryan, can be reached on (703) 308-2383. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305-3599 for regular communications and (703) 305-3599 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.


mam
May 28, 2002


STEPHEN KALAFUT
PRIMARY EXAMINER
GROUP 1700